

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

AGERE SYSTEMS, INC.,	)	Case No. 02-CV-03138-BMS
	)	
Plaintiff,	)	HON. BERLE M. SCHILLER
	)	
v.	)	
	)	
BROADCOM CORPORATION	)	
	)	
Defendant.	)	

**DEFENDANT BROADCOM CORPORATION'S ANSWER TO COMPLAINT AND  
COUNTERCLAIMS**

**ANSWER**

Defendant Broadcom Corporation (“Broadcom”) answers, responds, and counterclaims in response to the Complaint herein of plaintiff Agere Systems Inc. (“Agere”) as follows:

**JURISDICTION AND VENUE**

1. Broadcom admits the allegations set forth in Paragraph 1 of the Complaint.
2. Broadcom admits that this Court has subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338(a). Except as so admitted, Broadcom denies the remaining allegations set forth in Paragraph 2 of the Complaint.
3. Broadcom admits the allegations set forth in Paragraph 3 of the Complaint.
4. Broadcom admits the allegations set forth in Paragraph 4 of the Complaint.

## PARTIES

5. Broadcom lacks sufficient information to admit the allegations set forth in Paragraph 5 of the Complaint and on that basis denies them.

6. Broadcom admits the allegations set forth in Paragraph 6 of the Complaint.

7. Broadcom admits that it is a leading provider of highly integrated silicon solutions that enable broadband communications and networking of voice, video and data services. Broadcom further admits that, using proprietary technologies and advanced design methodologies, it designs, develops and supplies complete system-on-a-chip solutions and related hardware and software applications for every major broadband communications market. Broadcom further admits that its diverse product portfolio includes solutions for digital cable and satellite set-top boxes; cable and DSL modems and residential gateways; high-speed transmission and switching for local, metropolitan and wide area networking; home and wireless networking; cellular and terrestrial wireless communications; Voice over Internet Protocol (VoIP) gateway and telephony systems; broadband network processors; and SystemI/O™ server solutions. Except as so admitted, Broadcom denies the allegations set forth in Paragraph 7.

## THE PATENTS

8. Broadcom admits that U.S. Patent No. 4,941,154 ("the '154 patent") is entitled "Trellis Coding Method and Arrangement for Fractional Bit Rates," that the '154 patent states on its face that it was issued by the United States Patent Office to Lee-Feng Wei on July 10, 1990, and that a copy of the '154 patent is attached to the Complaint as Exhibit A. Except as so admitted, Broadcom denies the remaining allegations set forth in Paragraph 8 of the Complaint.

9. Broadcom lacks sufficient information to admit the allegations set forth in Paragraph 9 of the Complaint and on that basis denies them.

10. Broadcom denies the allegations set forth in paragraph 10 of the Complaint.

11. Broadcom admits that U.S. Patent No. 5,329,551 (“the ‘551 patent”) is entitled “Overlapped Multilevel Codes,” that the ‘551 patent states on its face that it was issued by the United States Patent Office to Lee-Feng Wei on July 12, 1994, and that a copy of the ‘551 patent is attached to the Complaint as Exhibit B. Except as so admitted, Broadcom denies the remaining allegations set forth in Paragraph 11 of the Complaint.

12. Broadcom lacks sufficient information to admit the allegations set forth in Paragraph 12 of the Complaint and on that basis denies them.

13. Broadcom denies the allegations set forth in paragraph 13 of the Complaint.

14. Broadcom admits that U.S. Patent No. 5,420,599 (“the ‘599 patent”) is entitled “Antenna Apparatus,” that the ‘599 patent states on its face that it was issued by the United States Patent Office to Nedim Erkocevic on May 30, 1995, and that a copy of the ‘599 patent is attached to the Complaint as Exhibit C. Except as so admitted, Broadcom denies the remaining allegations set forth in Paragraph 14 of the Complaint.

15. Broadcom lacks sufficient information to admit the allegations set forth in Paragraph 15 of the Complaint and on that basis denies them.

16. Broadcom denies the allegations set forth in paragraph 16 of the Complaint.

17. Broadcom admits that U.S. Patent No. 6,011,432 (“the ‘432 patent”) is entitled “Continuous Tuning of Switched Capacitor Circuits Using DC-Isolated Tuning Elements,” that the ‘432 patent states on its face that it was issued by the United States Patent Office to Roger A. Fratti and Douglas D. Lopata on January 4, 2000, and that a copy of the ‘432 patent is attached to the Complaint as Exhibit D. Except as so admitted, Broadcom denies the remaining allegations set forth in Paragraph 17 of the Complaint.

18. Broadcom lacks sufficient information to admit the allegations set forth in Paragraph 18 of the Complaint and on that basis denies them.

19. Broadcom denies the allegations set forth in paragraph 19 of the Complaint.

20. Broadcom admits that U.S. Patent No. 6,175,550 ("the '550 patent") is entitled "Orthogonal Frequency Division Multiplexing System with Dynamically Scalable Operating Parameters and Method Thereof," that the '550 patent states on its face that it was issued by the United States Patent Office to Richard D. J. van Nee on January 16, 2001, and that a copy of the '550 patent is attached to the Complaint as Exhibit E. Except as so admitted, Broadcom denies the remaining allegations set forth in Paragraph 20 of the Complaint.

21. Broadcom lacks sufficient information to admit the allegations set forth in Paragraph 21 of the Complaint and on that basis denies them.

22. Broadcom denies the allegations set forth in paragraph 22 of the Complaint.

23. Broadcom admits that U.S. Patent No. 6,563,786 ("the '786 patent") is entitled "Orthogonal Frequency Division Multiplexing System with Selectable Rate," that the '786 patent states on its face that it was issued by the United States Patent Office to Richard van Nee on May 13, 2003, and that a copy of the '786 patent is attached to the Complaint as Exhibit F. Except as so admitted, Broadcom denies the remaining allegations set forth in Paragraph 23 of the Complaint.

24. Broadcom lacks sufficient information to admit the allegations set forth in Paragraph 24 of the Complaint and on that basis denies them.

25. Broadcom denies the allegations set forth in paragraph 25 of the Complaint.

## COUNT I

26. Broadcom incorporates by reference its responses set forth in paragraphs 1-25 above.

27. Broadcom denies the allegations set forth in paragraph 27 of the Complaint.

28. Broadcom denies the allegations set forth in paragraph 28 of the Complaint.
29. Broadcom denies the allegations set forth in paragraph 29 of the Complaint.
30. Broadcom denies the allegations set forth in paragraph 30 of the Complaint.

**COUNT II**

31. Broadcom incorporates by reference its responses set forth in paragraphs 1-25 above.
32. Broadcom denies the allegations set forth in paragraph 32 of the Complaint.
33. Broadcom denies the allegations set forth in paragraph 33 of the Complaint.
34. Broadcom denies the allegations set forth in paragraph 34 of the Complaint.
35. Broadcom denies the allegations set forth in paragraph 35 of the Complaint.

**COUNT III**

36. Broadcom incorporates by reference its responses set forth in paragraphs 1-25 above.
37. Broadcom denies the allegations set forth in paragraph 37 of the Complaint.
38. Broadcom denies the allegations set forth in paragraph 38 of the Complaint.
39. Broadcom denies the allegations set forth in paragraph 39 of the Complaint.

40. Broadcom denies the allegations set forth in paragraph 40 of the Complaint.

**COUNT IV**

41. Broadcom incorporates by reference its responses set forth in paragraphs 1-25 above.

42. Broadcom denies the allegations set forth in paragraph 42 of the Complaint.

43. Broadcom denies the allegations set forth in paragraph 43 of the Complaint.

44. Broadcom denies the allegations set forth in paragraph 44 of the Complaint.

45. Broadcom denies the allegations set forth in paragraph 45 of the Complaint.

**COUNT V**

46. Broadcom incorporates by reference its responses set forth in paragraphs 1-25 above.

47. Broadcom denies the allegations set forth in paragraph 47 of the Complaint.

48. Broadcom denies the allegations set forth in paragraph 48 of the Complaint.

49. Broadcom denies the allegations set forth in paragraph 49 of the Complaint.

50. Broadcom denies the allegations set forth in paragraph 50 of the Complaint.

**COUNT VI**

51. Broadcom incorporates by reference its responses set forth in paragraphs 1-25 above.

52. Broadcom denies the allegations set forth in paragraph 52 of the Complaint.

53. Broadcom denies the allegations set forth in paragraph 53 of the Complaint.

54. Broadcom denies the allegations set forth in paragraph 54 of the Complaint.

55. Broadcom denies the allegations set forth in paragraph 55 of the Complaint.

### **COUNT VII**

56. Broadcom incorporates by reference its responses set forth in paragraphs 1-55 above.

57. Broadcom denies the allegations set forth in paragraph 57 of the Complaint.

### **DEFENSES**

58. In addition to the defenses described below, Broadcom expressly reserves the right to allege additional defenses as they become known through the course of discovery.

#### **FIRST DEFENSE**

59. Agere lacks standing to assert the '154 patent, '551 patent, '599 patent, '432 patent, '550 patent, and/or '786 patent.

#### **SECOND DEFENSE**

60. The Complaint fails to state a claim upon which relief can be granted.

#### **THIRD DEFENSE**

61. Broadcom has not infringed and does not infringe any valid claims of the '154 patent, '551 patent, '599 patent, '432 patent, '550 patent, or '786 patent.

#### **FOURTH DEFENSE**

62. The '154 patent, '551 patent, '599 patent, '432 patent, '550 patent, and '786 patent are invalid for failure to meet one or more of the conditions for patentability in 35

U.S.C. § 101 et seq., including those of sections 102, 103, and 112.

#### **FIFTH DEFENSE**

63. The ‘154 patent is unenforceable due to inequitable conduct. On information and belief, the named inventor, Lee-Fang Wei, and/or others substantively involved in the prosecution of the applications leading to the ‘154 patent, including Ronald D. Slusky, were aware of information material to the patentability of the claims of the ‘154 patent, but withheld that information from the U.S. Patent and Trademark Office with the intent to deceive the U.S. Patent and Trademark Office. The concealed material information includes prior work on signal coding techniques for use with fractional bit rate, as disclosed in U.S. Patent No. 5,113,401 (“Block Coding Scheme For Fractional-Bit Transmission”) and in Eleftheriou and Chevillat, “Fractional-bit transmission with single-symbol TCM,” *Abst. Int. Symp. Inform. Theory*, San Diego, CA, Jan. 1990. The withholding of this material prior art with the intent to deceive the U.S. Patent and Trademark Office constitutes inequitable conduct.

64. The ‘551 patent is unenforceable due to inequitable conduct. On information and belief, the named inventor, Lee-Fang Wei, and/or others substantively involved in the prosecution of the applications leading to the ‘551 patent, including Ronald D. Slusky, were aware of information material to the patentability of the claims of the ‘551 patent, but withheld that information from the U.S. Patent and Trademark Office with the intent to deceive the U.S. Patent and Trademark Office. The concealed material information includes prior art concatenated coding schemes and variants thereof, as described in Deng and Costello, “High Rate Concatenated Coding Systems Using Bandwidth Efficient Trellis Inner Codes,” *IEEE Trans. Comm.* (May 1989), in Wu and Costello, “New Multilevel codes over GF(q),” *IEEE Trans. Inform. Theory* (May 1992), in Krishnamoorthy and Heegard, ‘Structure And Decoding Of Reed-Solomon Based Cascade Codes,’ *Proc. of the 25th Annual Conf. on Information Sciences and Systems* (March 1991), and in Forney, “Concatenated Codes,” MIT Press (1966). The withholding of this material prior art with the intent to deceive the U.S. Patent and Trademark Office constitutes inequitable conduct.

65. The '599 patent is unenforceable due to inequitable conduct. On information and belief, the named inventor, Nedim Erkocevic, and/or others substantively involved in the prosecution of the applications leading to the '599 patent, including Paul J. Maginot and Robert G. Robinson, were aware of information material to the patentability of the claims of the '599 patent, but withheld that information from the U.S. Patent and Trademark Office with the intent to deceive the U.S. Patent and Trademark Office. The concealed material information includes U.S. Patent No. 5,313,218 ("Antenna Assembly") and European Patent No. 474,490 ("Antenna Assembly"). The withholding of this material prior art with the intent to deceive the U.S. Patent and Trademark Office constitutes inequitable conduct.

66. The '550 patent is unenforceable due to inequitable conduct. On information and belief, the named inventor, Richard D.J. van Nee, and/or others substantively involved in the prosecution of the applications leading to the '550 patent were aware of information material to the patentability of the claims of the '550 patent, but withheld that information from the U.S. Patent and Trademark Office with the intent to deceive the U.S. Patent and Trademark Office. The concealed material information includes a December 7, 2000 search report for European Patent No. 98,302,202, which is a foreign counterpart to the '550 patent, and more particularly includes U.S. Patent No. 5,416,767 ("Method of Transmitting a Data Stream, Transmitter and Receiver"), U.S. Patent No. 5,282,019 ("Method and Apparatus for the Transmission and Reception of a Multicarrier Digital Television Signal"), Japanese Patent 7,321,765, and International PCT Application No. WO 94/11961 ("Method and Arrangement for Dynamic Allocation of Multiple Carrier Wave Channels for Multiple Access by Frequency Division Multiplexing"). The concealed information further includes "Frequency and Time Division Multiple Access with Demand-Assignment Using Multicarrier Modulation for Indoor Wireless Communications Systems" by Kinugawa et al., *IEICE Trans. Comm.*, Vol. E77-B, No. 3, March 1994, and U.S. Patent No. 5,553,316 ("Power Control Method in a Wireless Communication System"). The withholding of this material prior art with the intent to deceive

the U.S. Patent and Trademark Office constitutes inequitable conduct.

67. The '786 patent is unenforceable due to inequitable conduct. On information and belief, the named inventor, Richard D.J. van Nee, and/or others substantively involved in the prosecution of the applications leading to the '786 patent were aware of information material to the patentability of the claims of the '786 patent, but withheld that information from the U.S. Patent and Trademark Office with the intent to deceive the U.S. Patent and Trademark Office. The concealed material information includes the Digital Audio Broadcasting standard published by the European Telecommunications Standards Institute (ETSI 300 401, February 1995). The withholding of this material prior art with the intent to deceive the U.S. Patent and Trademark Office constitutes inequitable conduct.

#### **SIXTH DEFENSE**

68. Broadcom is licensed to practice the inventions claimed in the '154 patent.

#### **SEVENTH DEFENSE**

69. On information and belief, the relief sought by Agere for the '154 patent, '551 patent, '599 patent, '432 patent, '550 patent, and '786 patent is barred in whole or in part under the doctrines of laches, waiver, and estoppel.

#### **EIGHTH DEFENSE**

70. On information and belief, Agere has failed to comply with the marking requirements of 35 U.S.C. § 287(a).

#### **COUNTERCLAIMS**

71. Broadcom is a corporation organized under the laws of the State of California with regular and established places of business at 190 Mathilda Place, Sunnyvale, California, 94086 and 3151 Zanker Road, San Jose California, 95134.

72. Upon information and belief, defendant Agere is a corporation organized under the laws of the State of Delaware with a regular and established places of business at 4995 Patrick Henry Drive, Santa Clara, California, 95054 and 1110 American Parkway N.E., Allentown, Pennsylvania, 18109.

73. Broadcom counterclaims against Agere pursuant to the patent laws of the United States, Title 35 of the United States Code, for patent infringement and for a specific remedy based upon the laws authorizing actions for declaratory judgment in the courts of the United States, 28 U.S.C. §§ 2201 and 2202, and Federal Rule of Civil Procedure 13.

74. This Court has subject matter jurisdiction over this action, which arises under the patent laws of the United States, pursuant to 28 U.S.C. §§ 1331 and 1338(a).

75. Venue in this District is proper under 28 U.S.C. Sections 1391(c) and 1400(b) because Agere is a corporation subject to personal jurisdiction in this District, because Agere has committed acts of infringement in this District, and because Agere maintains business offices in this District from which it regularly and systematically conducts its business.

**COUNT ONE – DECLARATION OF NON-INFRINGEMENT, INVALIDITY AND UNENFORCEABILITY OF THE ‘154 PATENT**

76. An actual controversy exists between Broadcom and Agere as set forth in the allegations of the Complaint in this action and the Answer as to whether the ‘154 patent is invalid, unenforceable, and not infringed by Broadcom.

77. The ‘154 patent is invalid, unenforceable, and not infringed as alleged in Paragraphs 1-70, above, which are incorporated herein by reference.

78. Based on the foregoing, Broadcom is entitled to a judgment holding that the ‘154 patent is invalid, unenforceable, and/or not infringed by Broadcom, and awarding Broadcom the damages it has suffered from the unlawful assertion of said patent by Agere.

79. The continued assertion of the ‘154 patent against Broadcom despite the invalidity, unenforceability, and noninfringement of the claims of the ‘154 patent, makes this an exceptional case under 35 U.S.C. § 285.

**COUNT TWO – DECLARATION OF NON-INFRINGEMENT, INVALIDITY AND UNENFORCEABILITY OF THE ‘551 PATENT**

80. An actual controversy exists between Broadcom and Agere as set forth in the allegations of the Complaint in this action and the Answer as to whether the ‘551 patent is invalid, unenforceable, and not infringed by Broadcom.

81. The '551 patent is invalid, unenforceable, and not infringed as alleged in Paragraphs 1-70, above, which are incorporated herein by reference.

82. Based on the foregoing, Broadcom is entitled to a judgment holding that the '551 patent is invalid, unenforceable, and/or not infringed by Broadcom, and awarding Broadcom the damages it has suffered from the unlawful assertion of said patent by Agere.

83. The continued assertion of the '551 patent against Broadcom despite the invalidity, unenforceability, and noninfringement of the claims of the '551 patent, makes this is an exceptional case under 35 U.S.C. § 285.

**COUNT THREE – DECLARATION OF NON-INFRINGEMENT, INVALIDITY AND UNENFORCEABILITY OF THE '599 PATENT**

84. An actual controversy exists between Broadcom and Agere as set forth in the allegations of the Complaint in this action and the Answer as to whether the '599 patent is invalid, unenforceable, and not infringed by Broadcom.

85. The '599 patent is invalid, unenforceable, and not infringed as alleged in Paragraphs 1-70, above, which are incorporated herein by reference.

86. Based on the foregoing, Broadcom is entitled to a judgment holding that the '599 patent is invalid, unenforceable, and/or not infringed by Broadcom, and awarding Broadcom the damages it has suffered from the unlawful assertion of said patent by Agere.

87. The continued assertion of the '599 patent against Broadcom despite the invalidity, unenforceability, and noninfringement of the claims of the '599 patent, makes this is an exceptional case under 35 U.S.C. § 285.

**COUNT FOUR – DECLARATION OF NON-INFRINGEMENT AND INVALIDITY AND OF THE '432 PATENT**

88. An actual controversy exists between Broadcom and Agere as set forth in the allegations of the Complaint in this action and the Answer as to whether the '432 patent is invalid and not infringed by Broadcom.

89. The '432 patent is invalid and not infringed as alleged in Paragraphs 1-70, above, which are incorporated herein by reference.

90. Based on the foregoing, Broadcom is entitled to a judgment holding that the '432 patent is invalid and/or not infringed by Broadcom, and awarding Broadcom the damages it has suffered from the unlawful assertion of said patent by Agere.

91. The continued assertion of the '432 patent against Broadcom despite the invalidity and noninfringement of the claims of the '432 patent, makes this is an exceptional case under 35 U.S.C. § 285.

**COUNT FIVE – DECLARATION OF NON-INFRINGEMENT, INVALIDITY AND UNENFORCEABILITY OF THE '550 PATENT**

92. An actual controversy exists between Broadcom and Agere as set forth in the allegations of the Complaint in this action and the Answer as to whether the '550 patent is invalid, unenforceable, and not infringed by Broadcom.

93. The '550 patent is invalid, unenforceable, and not infringed as alleged in Paragraphs 1-70, above, which are incorporated herein by reference.

94. Based on the foregoing, Broadcom is entitled to a judgment holding that the '550 patent is invalid, unenforceable, and/or not infringed by Broadcom, and awarding Broadcom the damages it has suffered from the unlawful assertion of said patent by Agere.

95. The continued assertion of the '550 patent against Broadcom despite the invalidity, unenforceability, and noninfringement of the claims of the '550 patent, makes this is an exceptional case under 35 U.S.C. § 285.

**COUNT SIX – DECLARATION OF NON-INFRINGEMENT, INVALIDITY AND UNENFORCEABILITY OF THE '786 PATENT**

96. An actual controversy exists between Broadcom and Agere as set forth in the allegations of the Complaint in this action and the Answer as to whether the '786 patent is invalid, unenforceable, and not infringed by Broadcom.

97. The '786 patent is invalid, unenforceable, and not infringed as alleged in Paragraphs 1-70, above, which are incorporated herein by reference.

98. Based on the foregoing, Broadcom is entitled to a judgment holding that the '786 patent is invalid, unenforceable, and/or not infringed by Broadcom, and awarding

Broadcom the damages it has suffered from the unlawful assertion of said patent by Agere.

99. The continued assertion of the '786 patent against Broadcom despite the invalidity, unenforceability, and noninfringement of the claims of the '786 patent, makes this is an exceptional case under 35 U.S.C. § 285.

**COUNT SEVEN – DECLARATION OF NON-INFRINGEMENT, INVALIDITY AND UNENFORCEABILITY OF THE '195 PATENT**

100. Agere claims it is the owner of all right, title and interest in United States Patent No. 5,396,195 ("the '195 patent") entitled "Low-Power-Dissipation CMOS Oscillator Circuits," issued on March 7, 1995 (attached hereto as Exhibit A).

101. An actual controversy exists between Broadcom and Agere as to whether the '195 patent is invalid, unenforceable, and not infringed by Broadcom.

102. Broadcom has not infringed, induced infringement of, or contributed to the infringement of, any valid claim of the '195 patent.

103. The claims of the '195 patent are invalid for failure to comply with the conditions and requirements set forth in the patent statute, including 35 U.S.C. §§ 102, 103 and 112.

104. The '195 patent is unenforceable due to inequitable conduct. On information and belief, the named inventor, Thaddeus J. Gabara, and/or others substantively involved in the prosecution of the application leading to the '195 patent, were aware of information material to the patentability of the claims of the '195 patent, but withheld that information from the U.S. Patent and Trademark Office with an intent to deceive the U.S. Patent and Trademark Office. The concealed material information includes prior art oscillator circuits, including the so-called Hartley and Colpitts oscillators, and including oscillator circuits that used directly cross-connected transistors, as was well-known in the art as discussed in CH 682019 A5 and in U.S. Patent No. 4,633,195. The withholding of this material prior art with the intent to deceive the U.S. Patent and Trademark Office constitutes inequitable conduct.

105. The continued assertion of the '195 patent against Broadcom, despite the non-infringement, invalidity and unenforceability of the claims of the '195 patent, makes this an exceptional case under 35 U.S.C. § 285.

**COUNT EIGHT – DECLARATION OF NON-INFRINGEMENT, INVALIDITY AND UNENFORCEABILITY OF THE '696 PATENT**

106. Agere claims it is the owner of all right and title and interest in United States Patent No. 5,828,696 ("the '696 patent") entitled "Timing Recovery In A Network-Synchronized Modem," issued on October 27, 1998 (attached hereto as Exhibit B).

107. An actual controversy exists between Broadcom and Agere as to whether the '696 patent is invalid, unenforceable, and not infringed by Broadcom.

108. Broadcom has not infringed, induced infringement of, or contributed to the infringement of, any valid claim of the '696 patent.

109. The claims of the '696 patent are invalid for failure to comply with the conditions and requirements set forth in the patent statute, including 35 U.S.C. §§ 102, 103 and 112.

110. The '696 patent is unenforceable due to inequitable conduct. On information and belief, the named inventors, Ehud A. Gelblum and James E. Mazo, and/or others substantively involved in the prosecution of the applications leading to the '696 patent, were aware of information material to the patentability of the claims of the '696 patent, but withheld that information from the U.S. Patent and Trademark Office with the intent to deceive the U.S. Patent and Trademark Office. The concealed material information includes the American National Standards Institute (ANSI) draft ADSL T1E1.4/93 standard, including the November 15, 1993 Asymmetric Digital Subscriber Line (ADSL) Working Draft Standard T1E1.4/93-007, prepared by the ANSI's T1E1.4 Working Group. The withholding of this material prior art with the intent to deceive the U.S. Patent and Trademark Office constitutes inequitable conduct.

111. The continued assertion of the '696 patent against Broadcom, despite the non-infringement, invalidity, and unenforceability of the claims of the '696 patent, makes this an exceptional case under 35 U.S.C. § 285.

**COUNT NINE – DECLARATION OF NON-INFRINGEMENT, INVALIDITY AND UNENFORCEABILITY OF THE '117 PATENT**

112. Agere claims it is the owner of all right and title and interest in United States Patent No. 5,065,117 ("the '117 patent") entitled "Decision Feedback Equalization With Trellis Coding," issued on October 8, 1991 (attached hereto as Exhibit C).

113. An actual controversy exists between Broadcom and Agere as to whether the '117 patent is invalid, unenforceable, and not infringed by Broadcom.

114. Broadcom has not infringed, induced infringement of, or contributed to the infringement of, any valid claim of the '117 patent.

115. The claims of the '117 patent are invalid for failure to comply with the conditions and requirements set forth in the patent statute, including 35 U.S.C. §§ 102, 103 and 112.

116. The '117 patent is unenforceable due to inequitable conduct. On information and belief, the named inventors, Richard D. Gitlin and Nicholas A. Zervos, and/or others substantively involved in the prosecution of the applications leading to the '117 Patent, were aware of information material to the patentability of the claims of the '117 Patent, but withheld that information from the U.S. Patent and Trademark Office with an intent to deceive the U.S. Patent and Trademark Office. The concealed material information includes the following: P. R. Chevillat & E. Eleftherios, "Decoding of Trellis-Encoded Signals In The Presence Of Intersymbol Interference And Noise," in *Proceedings of the 1988 IEEE International Conference on Communications* (the "ICC 1988" Conference), pp. 696-699, June 1988; European Patent Application No. 0133480; UK Patent Application No. GB 2225199; and U.S. Patent No. 4,995,057. The withholding of this material prior art with the intent to deceive the U.S. Patent and Trademark Office constitutes inequitable conduct.

117. The continued assertion of the '117 patent against Broadcom, despite the non-infringement, invalidity and unenforceability of the claims of the '117 patent, makes this an exceptional case under 35 U.S.C. § 285.

**COUNT TEN – AGERE’S INFRINGEMENT OF BROADCOM’S ‘771 PATENT**

118. Paragraphs 71-75 are incorporated herein by reference.

119. Broadcom is the owner of all right, title and interest in United States Patent No. 5,940,771 ("the '771 patent"), duly and legally issued on August 17, 1999 (attached hereto as Exhibit D).

120. The '771 patent relates to apparatus in semiconductor devices and/or systems. Agere manufactures and sells semiconductor devices and/or systems in competition with Broadcom.

121. Agere has been for a time past and is currently infringing the '771 patent in violation of 35 U.S.C. § 271 directly, contributorily, and by inducement by, without limitation, making, using, marketing, selling, and offering for sale semiconductor devices and/or systems which are covered by the '771 patent.

122. Agere has had actual and constructive knowledge of the '771 patent, and Agere's infringement of the '771 patent has been and is willful, and will continue unless enjoined by this Court. Pursuant to 35 U.S.C. §284, Broadcom is entitled to damages for infringement and treble damages.

123. Pursuant to 35 U.S.C. § 283, Broadcom is entitled to a permanent injunction against further infringement.

**COUNT ELEVEN – AGERE’S INFRINGEMENT OF BROADCOM’S ‘194 PATENT**

124. Paragraphs 71-75 are incorporated herein by reference.

125. Broadcom is the owner of all right, title and interest in United States Patent No. 6,424,194 ("the '194 patent"), duly and legally issued on July 23, 2002 (attached hereto as Exhibit E).

126. The '194 Patent relates to methods and apparatus in semiconductor devices. Agere manufactures and sells semiconductor devices in competition with Broadcom.

127. Agere has been for a time past and is currently infringing the '194 patent in violation of 35 U.S.C. § 271 directly, contributorily, and by inducement by, without limitation, making, using, marketing, selling, and offering for sale semiconductor devices which are covered by the '194 patent.

128. Agere has had actual and constructive knowledge of the '194 patent, and Agere's infringement of the '194 patent has been and is willful, and will continue unless enjoined by this Court. Pursuant to 35 U.S.C. §284, Broadcom is entitled to damages for infringement and treble damages.

129. Pursuant to 35 U.S.C. § 283, Broadcom is entitled to a permanent injunction against further infringement.

**COUNT TWELVE – AGERE'S INFRINGEMENT OF BROADCOM'S '705 PATENT**

130. Paragraphs 71-75 are incorporated herein by reference.

131. Broadcom is the owner of all right, title and interest in United States Patent No. 6,014,705 ("the '705 patent"), duly and legally issued on January 11, 2000 (attached hereto as Exhibit F).

132. The '705 patent relates to methods in semiconductor devices and/or systems. Agere manufactures and sells semiconductor devices and/or systems in competition with Broadcom.

133. Agere has been for a time past and is currently infringing the '705 patent in violation of 35 U.S.C. § 271 directly, contributorily, and by inducement by, without limitation, making, using, marketing, selling, and offering for sale semiconductor devices and/or systems which are covered by the '705 patent.

134. Agere has had actual and constructive knowledge of the '705 patent, and Agere's infringement of the '705 patent has been and is willful, and will continue unless enjoined by this Court. Pursuant to 35 U.S.C. §284, Broadcom is entitled to damages for

infringement and treble damages.

135. Pursuant to 35 U.S.C. § 283, Broadcom is entitled to a permanent injunction against further infringement.

**COUNT THIRTEEN – AGERE’S INFRINGEMENT OF BROADCOM’S ‘366 PATENT**

136. Paragraphs 71-75 are incorporated herein by reference.

137. Broadcom is the owner of all right, title and interest in United States Patent No. 5,740,366 (“the ‘366 patent”), duly and legally issued on April 14, 1998 (attached hereto as Exhibit G).

138. The ‘366 patent relates to apparatus in semiconductor devices and/or systems. Agere manufactures and sells semiconductor devices and/or systems in competition with Broadcom.

139. Agere has been for a time past and is currently infringing the ‘366 patent in violation of 35 U.S.C. § 271 directly, contributorily, and by inducement by, without limitation, making, using, marketing, selling, and offering for sale semiconductor devices and/or systems which are covered by the ‘366 patent.

140. Agere has had actual and constructive knowledge of the ‘366 patent, and Agere’s infringement of the ‘366 patent has been and is willful, and will continue unless enjoined by this Court. Pursuant to 35 U.S.C. § 284, Broadcom is entitled to damages for infringement and treble damages.

141. Pursuant to 35 U.S.C. § 283, Broadcom is entitled to a permanent injunction against further infringement.

**COUNT FOURTEEN – AGERE’S INFRINGEMENT OF BROADCOM’S ‘311 PATENT**

142. Paragraphs 71-75 are incorporated herein by reference.

143. Broadcom is the owner of all right, title and interest in United States Patent No. 6,374,311 (“the ‘311 patent”), duly and legally issued on April 16, 2002 (attached hereto as Exhibit H).

144. The ‘311 patent relates to apparatus in semiconductor devices and/or systems. Agere manufactures and sells semiconductor devices and/or systems in competition with Broadcom.

145. Agere has been for a time past and is currently infringing the ‘311 patent in violation of 35 U.S.C. § 271 directly, contributorily, and by inducement by, without limitation, making, using, marketing, selling, and offering for sale semiconductor devices and/or systems which are covered by the ‘311 patent.

146. Agere has had actual and constructive knowledge of the ‘311 patent, and Agere’s infringement of the ‘311 patent has been and is willful, and will continue unless enjoined by this Court. Pursuant to 35 U.S.C. §284, Broadcom is entitled to damages for infringement and treble damages.

147. Pursuant to 35 U.S.C. § 283, Broadcom is entitled to a permanent injunction against further infringement.

#### **COUNT FIFTEEN – EXCEPTIONAL CASE**

148. Broadcom repeats and realleges the allegations in paragraphs 1-147 as though fully set forth herein.

149. Agere has committed acts and will continue to commit acts that make this case exceptional under 35 U.S.C. § 285.

WHEREFORE, Defendant prays for judgment as follows:

A. That Agere’s Complaint be dismissed with prejudice, that Judgment be entered in favor of Broadcom, and that Agere take nothing;

B. That Agere be required to pay Broadcom its costs of suit, including its attorneys’ fees pursuant to 35 U.S.C. § 285;

C. For entry of a Judgment declaring the ‘154, ‘551, ‘599, ‘432, ‘550, ‘786, ‘195, ‘696, and ‘117 patents invalid, unenforceable, and not infringed by Broadcom or by the use of its products or services;

D. That Agere and each of its officers, employees, agents, alter egos, attorneys and any persons in active concert or participation with them be restrained from further prosecuting or instituting any action against Broadcom claiming that the '154, '551, '599, '432, '550, '786, '195, '696, and '117 patents are valid, enforceable, or infringed, or from representing that Broadcom's products or services, or that the use thereof, infringes the '154, '551, '599, '432, '550, '786, '195, '696, and '117 patents;

E. That Agere be adjudged to have infringed the '771, '194, '705, and '311 patents, and that Broadcom be awarded damages, treble damages, its costs of suit including its attorneys' fees pursuant to 35 U.S.C. § 285, and a permanent injunction against further infringement;

F. For such other relief as this Court may deem just and proper.

Dated: July 25, 2003

Respectfully submitted,

By:

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